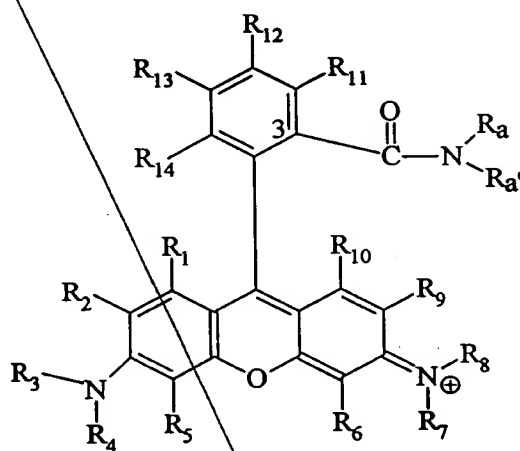


It is Claimed:

1. A method of labeling an organic compound for fluorescent detection, comprising:
 providing a fluorophore having the structure illustrated by Formula A

FORMULA A

where R_1 and R_{10} taken alone are hydrogen or halogen; R_2 , R_5 , R_6 and R_9 taken alone are hydrogen, alkyl, carboxyalkyl, aminoalkyl, alkylether, alkylthioether, halogen or alkoxy; R_3 , R_4 , R_7 and R_8 taken alone are hydrogen, and substituted or unsubstituted alkyl, carboxyalkyl, aminoalkyl, cycloalkyl, aryl; R_2 and R_3 taken together are alkyl chains each having from 2 to 5 carbon atoms connecting the 2' carbon to the nitrogen attached to the 3' carbon; R_5 and R_8 taken together are alkyl chains each having from 2 to 5 carbon atoms connecting the 7' carbon to the nitrogen attached to the 6' carbon; R_4 and R_5 taken together are alkyl, each having from 2 to 5 carbon atoms connecting the 4' carbon to the nitrogen attached to the 3' carbon; R_6 and R_7 taken together are alkyl, each having from 2 to 5 carbon atoms connecting the 5' carbon to the nitrogen attached to the 6' carbon; R_3 and R_4 taken together form an alkyl or alkylene chain containing up to 5 atoms in the principal chain, consisting of carbon and one or more heteroatoms from the group consisting

of nitrogen or oxygen, with both terminal valence bonds of said chain being attached to the nitrogen attached to the 3' carbon; R_7 and R_8 taken together form an alkyl or alkylene chain containing up to 5 atoms in the principal chain, consisting of carbon and one or more heteroatoms from the group consisting of nitrogen or oxygen, with both terminal valence bonds of said chain being attached to the nitrogen attached to the 6' carbon; R_{11} , R_{12} , R_{13} , and R_{14} are each hydrogen or halogen, where R_a and R_b are non-hydrogen substituents, wherein R_a confers resistance to lactam ring formation, and R_b includes a group reactive to derivatization; and,

conjugating the fluorophore with an organic compound to be labeled, the conjugating through the R_a group of the fluorophore, the resultant conjugate being fluorescent upon excitation with light of a determinable wavelength.

2. The method as in claim 1 wherein the conjugating includes reacting the organic compound and the fluorophore under covalent bond forming conditions.

3. The method as in claim 2 wherein the organic compound is a biomolecule.

4. The method as in claim 3 wherein the biomolecule is an amino acid, a peptide, a protein, a nucleotide, an oligonucleotide, or a nucleic acid.

5. The method as in claim 3 wherein the biomolecule is attached to a solid support.

6. The method as in claim 3 wherein the biomolecule is an oligonucleotide and the fluorophore is attached via a phosphoramidite at the 5' end in the conjugate.

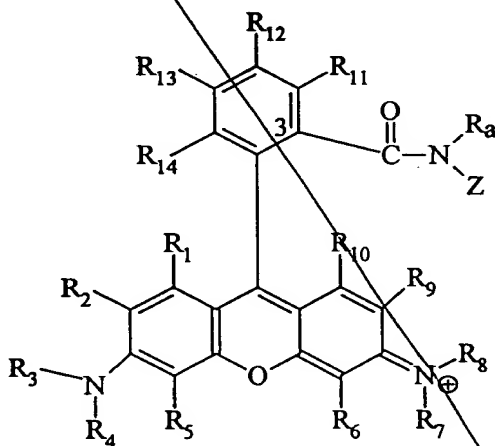
7. The method as in claim 5 wherein the biomolecule is an oligonucleotide and the fluorophore is attached at the 3' end in the conjugate.

8. The method as in claim 3 wherein the biomolecule is an amino acid, a peptide or a protein, and the fluorophore is attached at an amine or sulfhydryl in the conjugate.

9. The method as in claim 3 wherein the biomolecule is part of a cell surface membrane or of a viral coat.

10. A fluorescent conjugate comprising:
a conjugated substance and a fluorophore, the conjugated substance being an amino acid, peptide, protein, nucleotide, oligonucleotide, or nucleic acid to which is attached one or more fluorophores, the fluorescent conjugate having the structure illustrated by Formula 1

FORMULA 1



where R_1 and R_{10} taken alone are hydrogen or halogen; R_2 , R_5 , R_6 and R_9 taken alone are hydrogen, alkyl, carboxyalkyl, aminoalkyl, alkylether, alkylthioether, halogen or alkoxy; R_3 , R_4 , R_7 and R_8 taken alone are hydrogen, and substituted or unsubstituted

alkyl, carboxyalkyl, aminoalkyl, cycloalkyl, aryl; R_2 and R_3 taken together are alkyl chains each having from 2 to 5 carbon atoms connecting the 2' carbon to the nitrogen attached to the 3' carbon; R_6 and R_8 taken together are alkyl chains each having from 2 to 5 carbon atoms connecting the 7' carbon to the nitrogen attached to the 6' carbon; R_4 and R_5 taken together are alkyl, each having from 2 to 5 carbon atoms connecting the 4' carbon to the nitrogen attached to the 3' carbon; R_6 and R_7 taken together are alkyl, each having from 2 to 5 carbon atoms connecting the 5' carbon to the nitrogen attached to the 6' carbon; R_3 and R_4 taken together form an alkyl or alkylene chain containing up to 5 atoms in the principal chain, consisting of carbon and one or more heteroatoms from the group consisting of nitrogen or oxygen, with both terminal valence bonds of said chain being attached to the nitrogen attached to the 3' carbon; R_7 and R_8 taken together form an alkyl or alkylene chain containing up to 5 atoms in the principal chain, consisting of carbon and one or more heteroatoms from the group consisting of nitrogen or oxygen, with both terminal valence bonds of said chain being attached to the nitrogen attached to the 6' carbon; R_{11} , R_{12} , R_{13} , and R_{14} are each hydrogen or halogen, where R_a is an alkyl, carboxyalkyl, aminoalkyl, cycloalkyl, aryl, or arylalkyl having from 1 to 10 carbon atoms, and Z includes the conjugated substance.

11. The conjugate as in claim 10 wherein the conjugated substance is bound to the fluorophore through an amide, ester, ether, disulfide, or thioether linkage.

Sub A3 12. The conjugate as in claim 10 wherein the linkage between the fluorophore and conjugated substance includes a phosphate ester.

13. The fluorescent conjugate as in claim 10 wherein the conjugated substance is attached to a solid support.

14. The fluorescent conjugate as in claim 13 wherein the solid support is controlled pore glass.

15. The fluorescent conjugate as in claim 13 wherein the solid support is a polymer support.

16. The fluorescent conjugate as in claim 10 wherein the conjugated substance is part of a cell membrane.

17. The fluorescent conjugate as in claim 10 wherein the conjugated substance is part of a viral coat.

18. The fluorescent conjugate as in claim 10 wherein the fluorophore is derived from tetramethylrhodamine.

19. The fluorescent conjugate as in claim 10 wherein the fluorophore is derived from rhodamine 101.

20. The fluorescent conjugate as in claim 10 wherein the fluorophore is derived from rhodamine B.
